CLAIMS

1. Embedded pigments consisting of a labile chromophore embedded in a shell of refractory and transparent material consisting of aggregate nanoparticles adhering to the surface of the labile chromophore.

2. The pigments according to Claim 1, in which the labile chromophore is in turn in the form of a nanometric particle.

3. The pigments according to Claim 1, in which the labile chromophore is in the crystal form.

4. The pigments according to Claims 1 to 3, in which the labile chromophore is chosen in the group consisting of: cadmium sulphoselenide, hematite (Fe_2O_3), wolframium bronzes $M^I_nWO_3$, where M^I is an alkaline metal and $0.1<n<0.95$, or else molybdenum blues $MoO_x(OH)_y$, (where $x = 2$, and $y = 1$; or $x = 2.5$, and $y = 0.5$).

5. The pigments according to Claims 1 to 4, in which the shell of refractory and transparent material consists of nanoparticles of oxides chosen in the group consisting of: ZrO_2, Al_2O_3, SnO_2, $ZrSiO_4$, SiO_2, TiO_2, CeO_2, ZnO.

6. The embedded pigments according to Claims 1 to 5 chosen in the group consisting of:

$ZrSiO_4$: Fe_2O_3,

$ZrSiO_4$: Cd(S,Se),

ZrO_2 : Cd(S,Se),

SiO_2 : Cd(S,Se),

Al_2O_3 : Cd(S,Se),

Al_2O_3 : Fe_2O_3,

SnO_2 : Fe_2O_3,

SnO_2 : Cd(S,Se),

SiO_2 : $MoO_x(OH)_y$

Al_2O_3 : $MoO_x(OH)_y$

SnO_2 : $MoOx(OH)_y$

ZrO_2 : $MoO_x(OH)_y$

$ZrSiO_4$: $MoO_x(OH)_y$

(where $x = 2$, and $y = 1$; or $x = 2.5$, and $y = 0.5$)

SiO_2 : $M_n WO_3$

$Al_2O_3 : M_n WO_3$

$SnO_2 : M_n WO_3$

$ZrO_2 : M_n WO_3$

$ZrSiO_4 : M_n WO_3$

(where $0.1 \leq n < 0.95$, and M is chosen in the group consisting of Na, K, Li, Ca, Sr, Ba, Cu, Zn, Cd, In, Sn, La).

7. The process for the preparation of the nanometric particles according to Claims 1 to 6, in which:

- the salts of the desired metals are added to a known volume of alcohol;
- the solution is heated under stirring up to complete solubilization of the salts;
- water is added in the desired amount for facilitating hydrolysis of the salts, and the solution is heated up to a temperature higher than 150°C; and
- the suspension is left to cool and possibly centrifuged; the precipitate is collected and washed and dried.

8. The process for the preparation of the pigments according to Claims 1 to 6, in which first the nanometric particles of labile chromophore are prepared, and then the nanometric particles of transparent refractory material are superimposed thereon.

9. The process for the preparation of the pigments according to Claims 1 to 6, in which the labile chromophore is prepared in the form of a crystal according to the known methodologies, and then the nanometric particles of transparent refractory material prepared according to Claim 7 are deposited on the surface of said crystal.

10. Refractory and transparent oxides in the form of nanometric particles chosen in the group consisting of: ZrO_2, Al_2O_3, SnO_2, $ZrSiO_4$, SiO_2, TiO_2, CeO_2, ZnO.

11. Use of the embedded pigments according to Claims 1 to 6 for ceramic applications at high temperatures.

12. Use of the pigments according to Claims 1 to 6 for applications in the textile field.

13. Use of the oxides according to Claim 10 for the coating of surfaces in porcelain stoneware or non-ceramic substrates.

14. Use of the oxides according to Claim 10 for applications in the textile field.

15. Use of the pigments according to claim 1 – 6 and of the oxides according to claim 10 in the catalysts, cosmetic and in the plastic-, rubber-materials industry.